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Reply to Office action of October 14, 2004

Claim Amendments

This listing of the claims will replace all prior versions,
and listings, of claims in the application:

Claim 1 (currently amended): A leadframe for a radiation-
emitting component, comprising:

a mount part having:

at least one wire connecting area;

an opening formed therein; and

at least one external electrical connecting strip; and

a separately manufactured thermal connecting part ~~linked~~
disposed in said opening and fastened into said mount part,
said thermal connecting part having at least one chip mounting
area.

Claim 2 (currently amended): The leadframe according to claim
1, wherein said mount part has one of a bracket and an eye
into which said thermal connecting part is ~~linked~~ fastened.

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Claim 3 (original). The leadframe according to claim 1, wherein said thermal connecting part and said mount part are connected by at least one of the group consisting of a crimped connection, a riveted connection, a soldered connection, and a welded connection therebetween.

Claim 4 (original). The leadframe according to claim 1, further comprising a connection between said thermal connecting part and said mount part, said connection being at least one of a crimped connection, a riveted connection, a soldered connection, and a welded connection.

Claim 5 (original). The leadframe according to claim 1, wherein said thermal connecting part has a reflector well surrounding said chip mounting area.

Claim 6 (original). The leadframe according to claim 5, wherein said wire connecting area is disposed at a higher level than said chip mounting area as viewed from said chip mounting area.

Claim 7 (original). The leadframe according to claim 6, wherein:

said reflector well has an edge; and

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said wire connecting area is disposed above said edge as viewed from said chip mounting area.

Claim 8 (original). The leadframe according to claim 5, wherein:

a chip is to be mounted on said chip mounting area; and

said reflector well has height no greater than twice a height of the chip;

Claim 9 (original). The leadframe according to claim 1, wherein said thermal connecting part contains at least one of copper, aluminum, molybdenum, iron, nickel, and tungsten.

Claim 10 (original). The leadframe according to claim 1, wherein said chip mounting area has a surface coating for improving mounting of a chip.

Claim 11 (original). The leadframe according to claim 10, wherein said surface coating is at least one of a silver coating and a gold coating.

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Claim 12 (original). The leadframe according to claim 1,
wherein said leadframe contains at least one of copper and
iron.

Claim 13 (original). The leadframe according to claim 1,
wherein said connecting strip has a surface coating for
improving component mounting characteristics.

Claim 14 (original). The leadframe according to claim 13,
said surface coating is a coating selected from at least one
of a group consisting of a silver coating, a gold coating, a
tin coating, and a zinc coating.

Claim 15 (original). The leadframe according to claim 1,
wherein the radiation-emitting component is a light-emitting
diode component.

Claim 16 (currently amended): A leadframe for a light-
emitting diode component, comprising:

a mount part having:

at least one wire connecting area;

an opening formed therein; and

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at least one external electrical connecting strip; and

a separately manufactured thermal connecting part ~~linked~~
disposed in said opening and fastened into said mount part,
said thermal connecting part having at least one chip mounting
area.

Claim 17 (currently amended): A housing for light-emitting
components, comprising:

a leadframe including:

a mount part having:

at least one wire connecting area;

an opening formed therein; and

at least one external electrical connecting strip; and

a separately manufactured thermal connecting part ~~linked~~
disposed in said opening and fastened into said mount part,
said thermal connecting part having at least one chip mounting
area.

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Claim 18 (original). The housing according to claim 17,
further comprising:

a housing base body formed from a molding compound;

said leadframe being embedded in said base body to pass out
said connecting strip from said base body, and

said thermal connecting part having a thermal connecting
surface thermally connectable from the outside.

Claim 19 (original). The housing according to claim 18,
wherein:

said base body has a radiation outlet window; and

said thermal connecting part is embedded in said base body to
disposed said chip mounting area in said radiation outlet
window.

Claim 20 (original). The housing according to claim 19,
wherein said radiation outlet window has side walls in the
form of reflector surfaces.

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Claim 21 (original). The housing according to claim 19,
wherein said radiation outlet window has reflective side
walls.

Claim 22 (original). The housing according to claim 20,
wherein:

said thermal connecting part has a reflector well forming a
first part of a reflector;

said side walls of said radiation outlet window form a second
part of said reflector; and

said well merges to said second part.

Claim 23 (original). The housing according to claim 22,
wherein:

a chip is to be mounted on said chip mounting area; and

an overall height of said reflector is no greater than four
times a height of the chip.

Claim 24 (original). The housing according to claim 23,
wherein:

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the chip has a main emission direction;

said reflector well has reflector walls;

said radiation outlet window has reflector surfaces; and

said reflector walls and said reflector surfaces are at different angles with respect to the main emission direction.

Claim 25 (original). The housing according to claim 24, wherein an angle between said reflector walls and the main emission direction is greater than an angle between said reflector surfaces and the main emission direction.

Claim 26 (original). The housing according to claim 17, wherein said housing is a surface mounted housing.

Claim 27 (original). The housing according to claim 17, wherein said leadframe is a surface mounted a leadframe.

Claim 28 (original). The housing according to claim 17, wherein the light-emitting components are light-emitting diodes.

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Claim 29 (currently amended): A housing for light-emitting diodes, comprising:

a leadframe including:

a mount part having:

at least one wire connecting area;

an opening formed therein; and

at least one external electrical connecting strip; and

a separately manufactured thermal connecting part ~~linked~~
disposed in said opening and fastened into said mount part,
said thermal connecting part having at least one chip mounting
area.

Claim 30 (currently amended): A radiation-emitting component,
comprising:

a radiation-emitting chip; and

one of:

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a leadframe having:

a mount part having:

at least one wire connecting area;

an opening formed therein; and

at least one external electrical connecting
strip; and

a separately manufactured thermal connecting part
linked disposed in said opening and fastened into
said mount part, said thermal connecting part having
at least one chip mounting area; and

a housing for light-emitting components having:

a leadframe including:

a mount part having:

at least one wire connecting area;

an opening formed therein; and

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at least one external electrical connecting
strip; and

a separately manufactured thermal connecting part
linked disposed in said opening and fastened into
said mount part, said thermal connecting part having
at least one chip mounting area.

Claim 31 (original). The radiation-emitting component
according to claim 30, wherein said chip is a semiconductor
chip.

Claim 32 (original). The radiation-emitting component
according to claim 30, wherein said chip is at least partially
sheathed with a radiation-permeable compound.

Claim 33 (original). The radiation-emitting component
according to claim 32, wherein said radiation-permeable
compound is a plastic compound.

Claim 34 (original). The radiation-emitting component
according to claim 33, wherein said plastic compound is one of
a casting resin and a molding compound.

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Claim 35 (original). The radiation-emitting component according to claim 33, wherein said plastic compound contains at least one of a group consisting of an epoxy resin, an acryl resin, a silicone resin, and a mixture of at least two of said epoxy resin, said acryl resin, and said silicone resin.

Claim 36 (original). The radiation-emitting component according to claim 33, wherein:

said chip is a semiconductor chip; and

said radiation-permeable compound has a volume described by the formula $V \leq q \cdot H$, where H is a height of said chip and q is a scaling factor having a value is less than 10 mm².

Claim 37 (original). The radiation-emitting component according to claim 36, wherein q is a scaling factor having a value approximately equal to 7 mm².

Claim 38 (original). The radiation-emitting component according to claim 30, wherein said chip is a semiconductor chip mounted on said chip mounting area of said thermal connecting part.

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Claim 39 (original). The radiation-emitting component according to claim 38, wherein said chip is connected to said chip mounting area by one of an adhesive bond and a solder.

Claim 40 (original). The radiation-emitting component according to claim 38, wherein said chip is one of adhesively bonded and soldered to said chip mounting area.

Claim 41 (original). The radiation-emitting component according to claim 39, wherein said chip is mounted on said chip mounting area by a silver solder.

Claim 42 (original). The radiation-emitting component according to claim 41, wherein said silver solder has a melting temperature greater than 260°C.

Claim 43 (original). The radiation-emitting component according to claim 30, further comprising a wire connection electrically conductively connecting said chip to said wire connecting area.

Claim 44 (currently amended): A method for producing a semiconductor component according to claim 30, which comprises:

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providing the mount part;

~~linking~~ fastening the thermal connecting part having the chip mounting area into the opening formed in the mount part;

fitting the radiation-emitting chip to the chip mounting area;
and

embedding the mount part and the thermal connecting part in a housing molding compound.

Claim 45 (original). The method according to claim 44, which further comprises connecting the thermal connecting part to the mount part by one of riveting, crimping, and soldering.

Claim 46 (original). The method according to claim 44, which further comprises fitting the chip to the chip mounting area before the mount part and the thermal connecting part are embedded in the housing molding compound.

Claim 47 (original). The method according to claim 44, which further comprises soldering the chip to the chip mounting area at a soldering temperature greater than 260°C.

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Claim 48 (original). The method according to claim 44, which further comprises mounting the chip on the chip mounting area with a silver solder.

Claim 49 (original). The method according to claim 44, which further comprises embedding the mount part and the thermal connecting part in the housing molding compound by one of injection-molding and injection-compression.

Claim 50 (currently amended): A method for producing a semiconductor component, which comprises:

providing a leadframe having:

a mount part having:

at least one wire connecting area;

an opening formed therein; and

at least one external electrical connecting strip;

and

providing a separately manufactured thermal connecting part with at least one chip mounting area;

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linking placing the thermal connecting part in the opening and
fastening the thermal connecting part into the mount part;

fitting a radiation-emitting chip to the chip mounting area;

and

embedding the mount part and the thermal connecting part in a
housing molding compound.